

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A method of processing data stored in a structured data source, comprising:

receiving a natural language input;

analyzing the natural language input to identify semantic information contained therein;

associating portions of the natural language input with a command object identifying a command from a plurality of commands, wherein the plurality of commands are related to rendering data that has been retrieved from the structured data source and designated for rendering, a frame object identifying an arrangement for rendering the designated data selected ~~how to render data~~ from a plurality of different ~~ways~~ arrangements for rendering ~~to render~~ data and an entity object of a schema based on the semantic information and the natural language input, wherein the entity object relates to the designated data in the data source ~~that is to~~ be rendered based on the command object and the frame object; and

rendering the designated data from the data source ~~in a table of columns and rows based~~ on the schema and the associated portions of the natural language input.

2. (Previously Presented) The method of claim 1 and further comprising accessing the data source to identify words and phrases associated with dimensions in the data source.

3. (Original) The method of claim 2 wherein accessing further comprises identifying words and phrases associated with levels and values in the data source.

4. (Canceled)

5. (Original) The method of claim 1 wherein the command object relates to a task to be performed for rendering data.

6. (Canceled)

7. (Original) The method of claim 1 and further comprising:

changing the table based on a further command received.

8. (Original) The method of claim 7 wherein the further command is highlighting a portion of the table.

9. (Original) The method of claim 7 wherein the further command is sorting a portion of the table.

10. (Original) The method of claim 7 wherein the further command is filtering information in the table.

11. (Original) The method of claim 7 wherein the further command is adding information to the table.

12. (Original) The method of claim 7 wherein the further command is clearing information in the table.

13. (Original) The method of claim 7 wherein the further command includes switching the row and column information.

14. (Currently Amended) The method of claim 1 and further comprising:

~~presenting-rendering a plurality of candidate tables based on a plurality of candidate~~  
~~interpretations of semantic information provided in~~~~based on~~ the natural language  
input.

15. (Original) The method of claim 1 and further comprising:

providing an interactive interface to a user for entering the natural language input.

16. (Currently Amended) The method of claim 15 and further comprising:

performing at least one of indicating recognized terms in the natural language input and  
providing candidate interpretations of semantic information in the natural  
language input while a user enters the natural language input.

17. (Original) The method of claim 1 and further comprising:

rendering a natural language description of information in the table.

18. (Original) The method of claim 1 and further comprising:

maintaining a history of previous tables rendered for future use.

19. (Original) The method of claim 1 and further comprising associating portions of the natural language input with words and phrases associated with the data source.

20. (Original) The method of claim 1 wherein analyzing further comprises identifying ambiguous terms in the natural language input and presenting candidate alternatives for the ambiguous terms.

21-31 (Canceled)

32. (Currently Amended) A method of processing information to drive an application, comprising:

providing an interactive interface to a user for entering a natural language input;

receiving the natural language input;

analyzing the natural language input to identify semantic information contained therein;

accessing a schema to identify a command object, a frame object and an entity object  
based on the semantic information and the natural language input, the command

object identifying a command performed in the application, the frame object identifying how to render data retrieved from a data source and the entity object associated with a portion of the retrieved data that is designated for use ~~used by~~ the application; and

performing an action associated with the application based on the command object, the frame object and the entity object wherein the action includes rendering all of the designated data into each of a plurality of candidate tables based on a plurality of candidate interpretations of semantic information provided in the natural language input wherein rendering each of the candidate tables includes having the frame object associated~~data from a data source in a table of columns and rows, the frame object associating~~ the entity object with the command object such that the frame object ~~defiens~~ defines what portion of the designated data identified by the entity object is displayed in the columns and what portion of the designated data identified by the entity object is displayed in the rows.

33. (Original) The method of claim 32 wherein the application is a spreadsheet application.

34-38. (Canceled)

39. (Original) The method of claim 32 wherein accessing the schema includes identifying multiple entity objects.

40. (Original) The method of claim 32 wherein accessing the schema includes identifying multiple command objects.

41. (Currently Amended) A method of displaying information form a data source, comprising:  
receiving a first natural language input from a user;

analyzing the first natural language input to identify semantic information contained therein;

associating portions of the first natural language input with a command object, a frame object and an entity object of a schema based on the semantic information and the first natural language input;

displaying a table of columns and rows to the user illustrating data retrieved from the data source as a function of the command object, the frame object and the entity object;

receiving a second natural language input from the user referring to the table of columns and rows;

altering the schema based on the second natural language input; and

modifying the arrangement of the previously displayed data in the table as a function of the altered schema and displaying the newly arranged data in a modified table to the user.

42. (Previously Presented) The method of claim 41 wherein the frame object corresponds to how to render data.

43. (Previously Presented) The method of claim 41 wherein the command object relates to a task to be performed for rendering data.

44. (Previously Presented) The method of claim 41 wherein the entity object relates to data in the data source.

45. (Previously Presented) The method of claim 41 wherein the second natural language input relates to highlighting a portion of the table.

46. (Previously Presented) The method of claim 41 wherein the second natural language input relates to sorting at least a portion of the table.

47. (Previously Presented) The method of claim 41 wherein the second natural language input relates to filtering information in the table.

48. (Previously Presented) The method of claim 41 wherein the second natural language input relates to adding information to the table.

49. (Previously Presented) The method of claim 41 wherein the second natural language input relates to clearing information in the table.

50. (Previously Presented) The method of claim 41 wherein the second natural language input relates to switching the row and column information.

51. (Previously Presented) The method of claim 41 and further comprising associating portions of the natural language input with words and phrases associated with the data source.

52. (Previously Presented) The method of claim 41 wherein the second natural language input includes a command that is different from the command object in the schema.